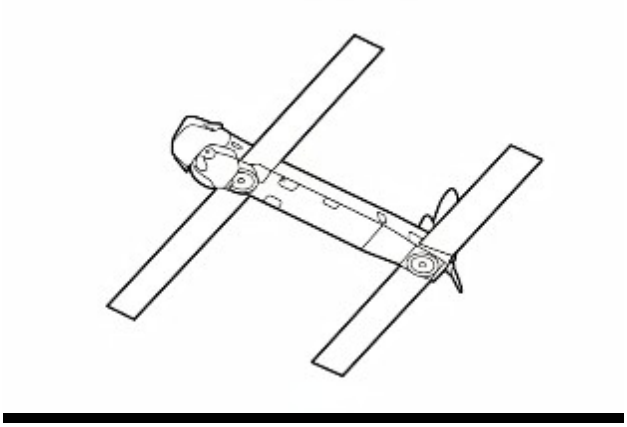
Switchblade 600



IDENTITY & DESIGNATION

Official Designation: Switchblade 600
Manufacturer: AeroVironment, Inc. (Arlington, Virginia, USA)
Country of Origin: United States
Year Introduced: 2021 (fielded 2022+)

CLASSIFICATION

Domain: Air
Category: Military
Sub-Category: Tube-launched loitering munition

Terminal Mode: Expendable — Kamikaze (with wave-off/re-engagement capability)

PHYSICAL SPECIFICATIONS

Weight: ~23 kg (all-up round)
Wingspan: ~1.3 m (deployed)
Launch Tube: Man-portable backpack system
Warhead: Anti-armor warhead (Javelin-derived) [VERIFY exact type]

PROPULSION & PERFORMANCE

Propulsion Type: Electric motor
Max Speed: ~185 km/h
Loiter Time: 40+ minutes
Max Range: ~40+ km

GUIDANCE, NAVIGATION & CONTROL

Control Link: Encrypted RF data link
Navigation: GPS/INS + EO/IR seeker
Terminal Guidance: Electro-optical / infrared lock-on; operator-guided or autonomous terminal
Wave-Off: Yes — can abort attack and re-engage different target
Operator Skill: Moderate — requires tactical training for target acquisition and terminal guidance
Fiber-Optic Option: No

WEAPONS & PAYLOADS

Warhead: Anti-armor (can defeat tanks, armored vehicles)
Kill Mechanism: EFP or shaped charge + kinetic impact

COUNTERMEASURE VULNERABILITY PROFILE

RF Jamming: MODERATE — Active RF link during loiter; but can lock-on and go autonomous terminal
GPS Spoofing: MODERATE — EO/IR terminal seeker provides GPS-independent terminal guidance
EMI/EMC Attack: MODERATE — Military-grade electronics
Laser DEW: HIGH — Small, slow during loiter phase
Kinetic Intercept: MODERATE — Small RCS, but loitering phase is vulnerable

Active Camouflage Defeat: EFFECTIVE — Uses EO/IR seeker; defeating the visual/thermal signature of targets degrades terminal guidance
Overall Vulnerability Rating: MODERATE

CRUISE MISSILE CONVERGENCE NOTES

The Switchblade 600 is a man-portable cruise missile. It launches from a tube, navigates to a target area using GPS/INS, loiters using EO/IR sensors while the operator selects a target, then executes a terminal dive with seeker lock. This is functionally identical to a loitering cruise missile with man-in-loop terminal guidance — a concept studied but never fielded during the BGM-109 program. The wave-off and re-engagement capability exceeds basic cruise missiles. Its Javelin-derived warhead and anti-armor capability put it in the same kill-chain as dedicated anti-tank missiles. The only “drone” characteristic: it loiters and can abort. By every other engineering measure, this is a cruise missile that a single soldier carries in a backpack.

OPERATIONAL HISTORY

Supplied to Ukraine beginning 2022. Used against Russian armored vehicles and fortified positions. Part of standard US infantry equipment. The wave-off capability has been critical in conflict zones where positive target identification is required before engagement. Demonstrates that “drone” and “missile” are marketing terms, not engineering categories.

SOURCES & CROSS-REFERENCES

Manufacturer: https://www.avinc.com/tms/switchblade-600
Cross-Ref: See: Shahed-136 (expendable attack parallel), AGM-114 Hellfire (warhead class comparison)